MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

TWC3231 MOBILE AND WIRELESS COMMUNICATIONS

(All Sections / Groups)

6 MARCH 2018
2.30 PM – 4.30 PM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 3 pages including cover page.
2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Write all your answers **CLEARLY** in the Answer Booklet provided.

Question 1

A. Identify FOUR components under mobile wireless framework and for each component provide TWO sub-components under them.

(4 marks)

B. Briefly describe typical WLAN configuration components.

(3 marks)

C. List THREE generic mobile computing platform and give ONE example for each platform.

(3 marks)

Question 2

A. Draw a diagram with at least ONE example for the classification of wireless network.

(4 marks)

B. List FOUR types of Wireless Local Loop (WLL) systems.

(2 marks)

C. Describe the levels of wireless security.

(4 marks)

Question 3

A. Middleware comprises a collection of services that provide functionality to simplify the construction of applications that execute across heterogeneous platforms. Explain the goal of middleware and list TWO example functions under middleware.

(2 marks)

B. Explain FOUR lower layer protocols of Bluetooth.

(4 marks)

C. Cellular networks are wireless WANs that establish a connection between mobile users. Briefly explain the issues vital to cellular network.

(4 marks)

Question 4

A. The advanced mobile and wireless technologies will enable new applications which will dramatically increase the demand for bandwidth. Compile SIX applications under that category.

(3 marks)

B. A satellite is essentially a microwave repeater in the sky which receives signals from transmitting stations on earth and relays these signals back to the receiving stations on the earth or another satellite. Categorise and explain FIVE types of satellites.

(5 marks)

C. IEEE 802.16 or WiMax standards are concerned with the air interface between the subscriber's transceiver station and the base transceiver station. The standards specify all the details of that interface. Explain TWO parts of WiMAX system.

(2 marks)

Continued...

Question 5

A. Explain THREE different type of wireless networks.

(6 marks)

B. There are many possible radio LAN topologies. Compare between peer-to-peer and base-to-remote radio LAN technology in term of coverage and access point.

(2 marks)

C. TDMA and FDMA are two popular access protocols in wireless networking. Discriminate both protocols in term of channel access bandwidth and time.

(2 marks)

Question 6

A. Conclude the similarities of Wireless to Wired Security.

(3 marks)

B. Differentiate between WPAN and WLAN.

(4 marks)

C. Identify the frequency reuse pattern for cellular network as shown in Figure 1 – 3 below.

(3 marks)

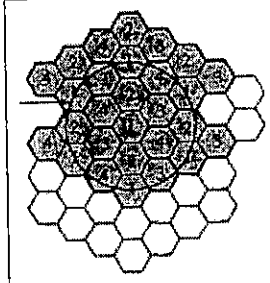	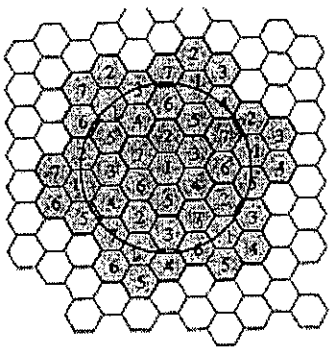	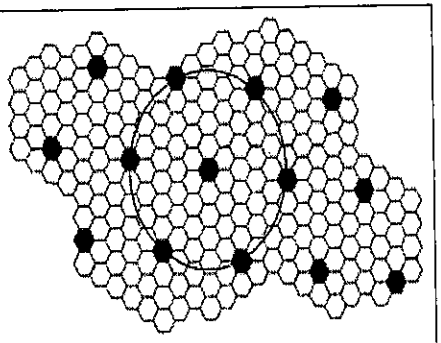
Figure 1: _____	Figure 2: _____	Figure 3: _____

End of Paper